AMENDMENTS TO THE CLAIMS

Following is a listing of all claims in the present application, which listing supersedes all previously presented claims:

Listing of Claims:

1. (Original) A flexible MEMS transducer, comprising

a substrate of a flexible material;

a membrane layer deposited on the substrate, the membrane layer having a raised part of a predetermined length;

a lower electrode layer formed by depositing an electrically conductive material on the membrane layer;

an active layer formed by depositing a piezopolymer on the lower electrode layer;

an upper electrode layer formed by depositing an electrically conductive material on the active layer;

a first connecting pad electrically connected to the lower electrode layer; and

a second connecting pad electrically connected to the upper electrode layer.

2. (Original) The flexible MEMS transducer as claimed in claim 1, further comprising a lower protective layer coated on the substrate.

3. (Original) The flexible MEMS transducer as claimed in claim 2, the lower protective layer is formed of either silicon nitride or silicon oxide.

4. (Original) The flexible MEMS transducer as claimed in claim 2, wherein the lower protective layer has a thickness of less than about 10 μm.

5. (Original) The flexible MEMS transducer as claimed in claim 1, wherein the substrate is formed of either a high-molecular (polymeric) material or a metallic thin film.

6. (Original) The flexible MEMS transducer as claimed in claim 5, wherein the high-molecular (polymeric) material is polyimide.

7. (Original) The flexible MEMS transducer as claimed in claim 1, wherein the membrane layer is formed of silicon nitride.

8. (Original) The flexible MEMS transducer as claimed in claim 1, wherein the membrane layer has a thickness of less than about 5 μm.

9. (Original) The flexible MEMS transducer as claimed in claim 1, wherein the lower electrode layer and the upper electrode layer are formed of a material selected from the group consisting of metals and electrically conductive polymers.

10. (Original) The flexible MEMS transducer as claimed in claim 9, wherein the metal is aluminum.

11. (Original) The flexible MEMS transducer as claimed in claim 1, wherein the lower electrode layer has a thickness of between about 0.01 μm to 5 μm.

12. (Original) The flexible MEMS transducer as claimed in claim 1, wherein the upper electrode layer has a thickness of between about 0.01 μm to 5 μm.

13. (Original) The flexible MEMS transducer as claimed in claim 1, wherein the piezopolymer is selected from the group consisting of PVDF, PVDF-TrEF, TrEF, Polyurea, polyimide and Nylon.

14. (Original) The flexible MEMS transducer as claimed in claim 1, wherein the active layer has a thickness of between about 1 μm to 10 μm.

15. (Original) The flexible MEMS transducer as claimed in claim 1, wherein the active layer has a resonance frequency of between about 1 Hz to 100 kHz.

16. (Original) The flexible MEMS transducer as claimed in claim 1, wherein the active layer has a length of between about 50 μm to 1000 μm.

17. (Original) The flexible MEMS transducer as claimed in claim 1, further comprising an upper protective layer to cover the upper and lower electrode layers and the active layer.

18. (Original) The flexible MEMS transducer as claimed in claim 17, wherein the upper protective layer is formed of either silicon nitride or silicon oxide.

19. (Original) The flexible MEMS transducer as claimed in claim 1, wherein the upper protective layer has a thickness of between about 1 μm to 10 μm.

20. (Currently Amended) The ~~method~~ flexible MEMS transducer as claimed in claim 1, wherein the first connecting pad and the second connecting pad are formed of a material selected from the group consisting of metals and electrically conductive polymers.

Claims 21-32. (Canceled)

33. (Withdrawn—Currently Amended) A flexible wireless MEMS microphone including the flexible MEMS transducer as claimed in claim 1, and further comprising:

~~a substrate of a flexible polymeric material;~~

~~a flexible MEMS transducer structure formed on the substrate by plasma enhanced chemical vapor deposition (PECVD);~~

an antenna printed on the substrate for communicating with an outside source;

a wire and interface circuit embedded in the substrate to electrically connect the flexible MEMS transducer and the antenna;

a flexible battery layer electrically connected to the substrate for supplying power to the flexible MEMS transducer; and

a flexible bluetooth module layer electrically connected to the battery layer.

34. (Withdrawn) The flexible wireless MEMS microphone as claimed in claim 33, wherein the substrate is formed of a high-molecular (polymeric) material.

35. (Withdrawn) The flexible wireless MEMS microphone as claimed in claim 34, wherein the high-molecular (polymeric) material is polyimide.

36. (Withdrawn) The flexible wireless MEMS microphone as claimed in claim 33, wherein the battery layer is a polymer battery having a paper-like thinness.

37. (Withdrawn) The flexible wireless MEMS microphone as claimed in claim 33, wherein the battery layer is a flexible solar cell.

38. (Canceled)

39. (Withdrawn) The flexible wireless MEMS microphone as claimed in claim 33, wherein the flexible substrate, on which the flexible MEMS transducer is formed, the antenna is printed, and the wire and interface circuit are embedded, is able to be folded at a predetermined angle.

40. (Withdrawn) The flexible wireless MEMS microphone as claimed in claim 39, wherein the predetermined angle is in the range of less than about 180°.

41. (Withdrawn—Currently Amended) A flexible MEMS wireless microphone including the flexible MEMS transducer as claimed in claim 1, and further comprising:

~~a flexible substrate, which has a flexible MEMS transducer structure formed by plasma enhanced chemical vapor deposition (PECVD)~~, an antenna printed ~~thereon~~ on the substrate to be electrically connected to the flexible MEMS transducer ~~structure~~ and for communicating with an outside source and a wire and interface circuit embedded ~~therein~~ in the substrate for electrically connecting the flexible MEMS transducer and antenna;

a flexible battery layer electrically connected to the ~~flexible~~ substrate; and

a bluetooth module layer, which are sequentially deposited to a predetermined thickness.

42. (Withdrawn) The flexible wireless MEMS microphone as claimed in claim 41, wherein the flexible MEMS wireless microphone is able to be folded at a predetermined angle.

43. (Withdrawn) The flexible wireless MEMS microphone as claimed in claim 41, wherein the predetermined angle is in the range of less than about 180°.

44. (Withdrawn) The flexible wireless MEMS microphone as claimed in claim 41, wherein the flexible wireless MEMS microphone is formed into a desired three-dimensional structure by cutting in accordance with a side shape of the desired three-dimensional structure and folding the cut piece at a predetermined angle, followed by assembling into the three-dimensional structure.

Claims 45-52. (Canceled)